

12 September 1955

MEMORANDUM FOR: Chief, TSS/APD

SUBJECT : Tests of Four Modified K-20 Cameras

1. Attached are the results of the tests of two 15" focal length and two 6 3/8" focal length K-20 cameras which you requested TSS/Photographic Division to make.

2. TSS/PD never has had possession of any data relative to the tests made at [ ] or elsewhere.

50X1

3. We are now making the necessary arrangements for these cameras to be returned to you for such action as may be necessary to put them in working order.

4. When the corrective work has been completed, it is requested these cameras be returned to TSS/PD/OPS since it is the function of the Branch to check such equipment before it leaves this area for operational use and to train the personnel who will be required to use it.

50X1

[ ]  
Chief, TSS/Photographic Division

Distribution:

Orig. & 1 - Addressee  
1 - AC/TSS/TA  
1 - TSS/SRB  
1 - PD/Files

TSS/TA/PD/[ ]

50X1

Attachment: 1 - Report

B-9907  
SECRET

**SECRET**TESTS OF FOUR MODIFIED K-20 CAMERAS

1. The following subject cameras have been given practical ground checks by TSS/Photographic Division personnel experienced in the use of these cameras:

a. # 1 K-20, modified, 15" f 5.6 lens, CE55-151 with / added modification for instrument recording.

b. # 2 K-20, modified, 15", f 5.6 lens, CE55-152 with ✓ added modification for instrument recording.

c. # 3 K-20, U. S. N. -43 - 4640 with modification for 3 instrument recording.

d. # 4 K-20, U. S. N. - 42 - 2217 with modification for 4 instrument recording.

2. It is realized the cameras were not checked adequately before being sent to the operational testing location because of insufficient time. The following comments are restricted to the subject cameras after ground checks had been accomplished on their return from the field tests.

3. The cameras were well packed for shipment, but cameras # 3 and # 4 have a considerable amount of adhesive stuck onto the instrument recording case. In future packaging, it might be suggested greater care be exercised so such adhesives will not adhere to the glass or metal parts of the cameras.

4. In taking the cameras apart for loading, we noticed the gasket material used around the instrument recording and film loading chambers had deteriorated. In some places the adhesive holding the gasket to the metal no longer was effective, while in other places the gasket material itself had become twisted or had been so flattened out as to appear to require replacement. It is suggested that this be considered as a weak point and suitable alteration be made so the loading and unloading of the cameras can be accomplished with greater safety as to possible light leaks.

5. One of the contact points which actuates the instrument recording lights for exposing the film is of the reed type. We found several of these were so sprung that no contact was formed when the shutter mechanism was actuated. We adjusted these contacts so that when the film was loaded, every one of these contact points was working so that the light in the instrument recording chamber was actuated. After the leader had been run through to the point of first exposure, however, these lights failed as follows:

**SECRET**

-2-

a. # 1 camera: Instruments were recorded in erratic manner; and, after approximately one third of the roll had been exposed, were not recorded at all.

b. # 2 camera: No instrument data recorded.

c. # 3 camera: Instruments were recorded quite well throughout the roll.

d. # 4 camera: No instrument data recorded.

6. TSS/PD sent the exposed rolls of test film outside the Agency for processing. We feel the processing was very poorly done. The procedure was followed since none of our Agency processing labs have the proper facilities for processing this size roll film. Water spots and development streaks can be seen on much of the four rolls of film. Minimum shutter speeds of 1/200 or 1/250 second were used with appropriate aperture settings. Since the cameras were rested on supports, it is felt they were quite steady during the exposures.

a. # 1 camera: The negatives seem to indicate shutter trouble. The negatives are badly out of focus.

b. # 2 camera: Edge fog could indicate some light leakage as had been discussed previously in paragraph 4.

c. # 3 camera: Spacing between frames is very uneven and overlaps on occasion for the full length of the roll.

d. # 4 camera: Sample strip indicates the type of negative obtained for the full roll.

7. In each case the film was loaded properly and the negatives show correct orientation.

8. In the case of cameras # 1 and # 3 difficulty was experienced in the film advance mechanism. The operators were not at all certain the film was advancing properly.

**SECRET**